What Is Claimed Is:

1. A microwave oscillator having a hollow conductor (20), an oscillation generator (16) which is mounted on a heatsink (14) and projects into the hollow conductor (20), and a printed circuit board (12) having electronic components (24) for supplying direct voltage to the oscillation generator (16),
wherein the printed circuit board (12) or a metal layer on, in, or under this printed circuit board forms a wall of the hollow conductor (20), and the oscillation generator (16) including its heatsink (14) is located in the printed circuit board (12).

2. The microwave oscillator as recited in Claim 1,
wherein a conductive structure (26) is situated on the printed circuit board (12) and forms a lowpass filter (40) and is connected electrically to the oscillation generator (16) and the components (24) for supplying direct voltage to the oscillator generator (16).

3. The microwave oscillator as recited in Claim 1 or 2,
wherein a stripline (34) is situated on the printed circuit board (12), the stripline (34) being coupled to the microwave field within the hollow conductor (24) and being guided out of the hollow conductor (20) as a microwave output.

4. The microwave oscillator as recited in one of the preceding claims,
wherein the hollow conductor (20) is expanded to form a resonator chamber (22) in the area of the oscillation generator (16).

5. The microwave oscillator as recited in Claim 4,
wherein the hollow conductor (20) is impervious to the fundamental wave in the resonator chamber (22), and the distance between the stripline (34) and the resonator chamber (22) is greater than the decay distance of this fundamental wave.

6. The microwave oscillator as recited in one of Claims 1 through 3,
wherein an adjustable resonator disc (42) is situated in the hollow conductor (20) diametrically opposite the oscillation generator (16).

7. The microwave oscillator as recited in one of the preceding claims,
wherein the hollow conductor (20) is closed at one end by a choke piston (36), which is in electrical contact with a metallic coating (38) on, in, or under the printed circuit board (12).

8. The microwave oscillator as recited in one of the preceding claims,
wherein a metallic base plate (10) is situated on the side of the printed circuit board (12) facing away from the hollow conductor (20), the metallic base plate (10) being

electrically connected to the other walls of the hollow conductor (20) and being in thermal and electrical contact with the heatsink (14).

9. The microwave oscillator as recited in one of the preceding claims, wherein the printed circuit board (12) has at least one continuous metallic coating, which is electrically connected to the other walls of the hollow conductor.